JOINT INVENTORS

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APPLICATION FOR UNITED STATES LETTERS PATENT SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that we, Boris MAYER, a citizen of Germany, residing at Weberstrasse 20, 53113 Bonn, Germany, and Clemens GÜNTHER, a citizen of Germany, residing at Annaberger-Strasse 9, 53175 Bonn, Germany, have invented a new and useful METHOD FOR CONTROLLING ELECTRONIC PARCEL COMPARTMENT SYSTEMS, of which the following is a specification.

METHOD FOR CONTROLLING ELECTRONIC PARCEL COMPARTMENT SYSTEMS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This is a continuation of International Application No. PCT/DE02/03758 filed October 7, 2002, the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE DISCLOSURE

Field of the Disclosure

[0002] The disclosure generally relates to a method for controlling electronic parcel package compartment systems.

Brief Description of Related Technology

[0003] International Publication No. WO 01/63494 A2 discloses a computer-controlled system for delivering goods in which one or more locker systems are connected to a server that administers and provides the processes and data for the ordering of goods, their delivery, and the operation of the locker system.

SUMMARY OF THE DISCLOSURE

[0004] Disclosed herein is a method operable such that a flexible and simple adaptation of an electronic parcel compartment system is made possible. In particular, the method allows a quick and reliable change of the operating parameters of the parcel compartment system.

[0005] Accordingly, a method for controlling electronic parcel compartment systems is carried out in such a way that a checking procedure is carried out in the area of the server to see whether changes have been made to the data stored in the server and in that control commands are transmitted via an interface to the parcel compartment system as soon as a predefinable number of changes have been made to the data stock.

[0006] The method includes determining whether a predefinable number of changes have been made to the data stored in a server, and transmitting control commands to a parcel

compartment system via an interface when a predefinable number of changes have been made to the data.

[0007] The disclosed method, thus, entails centralization and harmonization of the control commands for the parcel compartment systems. The interface provided for this centralization allows a virtually real-time transmission of the control commands to the parcel compartment systems.

[0008] Additional features of the disclosure may become apparent to those skilled in the art from a review of the following detailed description, taken in conjunction with the example, and the appended claims.

DETAILED DESCRIPTION

[0009] The disclosed method makes it possible to achieve harmonized operating conditions for a plurality of electronic parcel compartment systems and to change these operating conditions on short notice. This dynamic change can relate to access rights of individual users or user groups as well as to operating parameters of the electronic parcel compartment system.

[0010] In an embodiment in which the control commands change operating parameters of the electronic parcel compartment system, preferably the entire configuration of the parcel compartment systems can be changed. In this manner, for example, pick-up time periods for individual users and/or user groups can be changed centrally.

[0011] Furthermore, it is advantageous for the control commands to act upon an electronic control unit located in the area of the electronic parcel compartment system in such a way that the selection of the available operating functions is changed. Moreover, it is advantageous for the control commands for controlling the parcel compartment systems to change properties of the graphic user interface. Advantageously, this embodiment of the invention is carried out in such a way that a selection option of menu items of the graphic user interface is changed by the control commands.

[0012] In order to achieve an especially flexible and reliable transmission of the control commands, it is advantageous for the control commands to be transmitted in accordance with an XML protocol. As a matter of principle, control commands between the parcel compartment system and the server are transmitted in a push-oriented or pull-oriented manner.

[0013] In an advantageous embodiment, the electronic parcel compartment systems send to the interface a request for the transmission of the control commands. Here, it is advantageous for the request for the transmission of the control commands to be repeated when an event occurs. It is likewise advantageous for the request to be repeated after a predefinable time interval.

[0014] In an especially preferred embodiment of the method, a checking procedure is carried out in the area of the server to see whether changes have been made to the data stored in the server and, if changes have been made to the data stored in the server, then control commands are transmitted to the parcel compartment systems. In this manner, a comprehensive transmission of control commands can be achieved. Moreover, the requisite volume of data traffic is reduced. In order to further reduce the data traffic, it is advantageous for the control commands to be transmitted as soon as a predefinable number of changes have been made to the data stock. Moreover, it is advantageous for the parcel compartment systems to also send data to the server.

[0015] The interface that transmits the control commands for the parcel compartment systems to the parcel compartment systems as well as another interface are suitable for transferring the data from the parcel compartment systems to the server. Advantageously, the server converts the transferred data into control commands for controlling the parcel compartment systems.

[0016] The measures depicted can further increase the reliability of the parcel compartment systems and of the method. This is especially the case because, if instances of misuse occur at one of the parcel compartment systems, the appertaining data is transmitted to the server and subsequently converted into control commands for all of the parcel compartment systems.

[0017] The subject matter of the disclosure is also directed to an interface that is configured in such a way that it comprises a data input to receive data for controlling electronic parcel compartment systems and/or for transmitting control commands to the parcel compartment systems as well as a means for transferring the data and/or the control commands to the parcel compartment systems.

EXAMPLE

[0018] The following example is directed to an especially preferred embodiment in which data communication is established between the server and the parcel compartment systems as well as between the parcel compartment systems and the server. This example is especially preferred because it allows an even greater flexibility of the method.

[0019] In the server or in another data processing unit, data events are evaluated and converted into control commands.

[0020] In the depicted embodiment of the especially preferred bidirectional data transmission between the parcel compartment systems and the server, it is possible for the parcel compartment systems to request a transmission of control commands from the parcel compartment system.

[0021] Preferably, the server employed is a web server that is capable of transmitting the data transfer commands in accordance with the http protocol. Requests for the transmission of control commands are transmitted to the server, for example, as XML files. The names and functions of individually employed data are compiled in the table, below.

Table

Data	Function
UserID	User name
AccountID	Name of the user account
SecurityToken	Password for the access authorization
Language	Language for transmitting error messages, these languages can be freely selected and include, for example, German and English
ProcessingMode (default is MODULE)	Contains the encoded mode of the placement or pick-up of the parcel
RequestID	Identification data regarding the request for the transmission of control commands

[0022] Preferably, the data is transferred in a suitable format or with a suitable encryption, for example, in accordance with the ISO 8859 1 standard. XML (W3C) allows the use of the following data types:

ASCII Value 0x0009 (Tab)

ASCII Value 0x000A (Newline)

ASCII Value 0x000C (Carriage Return)

ASCII Values 0x0020-0xD7FF and 0xE000-0xFFFD (Printable Characters)

[0023] The advantages of an interface that is limited to predefined or predefinable data types lie in the fact that it is universally deployable, expandable, and independent of the manufacturer.

[0024] The foregoing description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as modifications within the scope of the disclosure may be apparent to those having ordinary skill in the art.